



## The journeys and botanical collections of Edward Macarthur Bowman (1826–1872)

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### Introduction

Edward Macarthur Bowman (1826–1872) was an important and talented Australian plant collector, yet very little has been written about him. His plant collections, particularly those from central-eastern Queensland, were made very soon after the first European settlement, and hence many of the species he gathered were new to science.

Bowman was one of the many plant collectors who regularly sent specimens to Ferdinand Mueller in Melbourne. Mueller considered Bowman to be “one of my most generous and observant amateur collectors” (Bean 2018).

The only published data about Bowman’s collecting activities was provided by Blake (1955), who gave a useful summary of his collecting region in Queensland and mentioned many of his collecting localities. This paper documents his collecting activities in central and western N.S.W., and gives details of his travels and plant collecting in Queensland. Maps are provided showing the routes taken on his 1863 expedition to Burdekin River, the 1864 expedition to Cape River and Flinders River, and his journey to Clermont and Broadsound in 1871; other maps show the locations visited when he was based at Neerkol Creek in 1866–67 and Gainsford/Herberts Creek in 1869–71. Images of his handwriting and specimen labels are provided, his specimen labelling peculiarities are discussed, and his plant collection activities are analysed. A gazetteer of his Queensland collecting localities (Appendix 1) includes the estimated

### Abstract

A detailed study of the plant specimens of Edward Macarthur Bowman is presented, including notes on their quality, numbering and labelling. This is followed by a chronology of Bowman’s collecting activities, including maps depicting the routes he took on his major journeys. Samples of his handwriting and specimen labels are included, and a discussion of the importance of his specimen collections is given. An annotated list of his Queensland collecting localities is included.

**Keywords:** National Herbarium of Victoria, maps, handwriting, specimen collections

latitude and longitude and precision level for each locality, the number of gatherings made there, the year(s) and sometimes the month that the locality was visited, and miscellaneous notes.

No correspondence between Mueller and Bowman can now be found, and it was very likely destroyed in the 1930s (Short 1990). This reconstruction of Bowman's journeys and botanical itinerary is based largely on a painstaking process of sorting and resorting of digital specimen records provided by the National Herbarium of Victoria (MEL). Hypotheses were formed and sometimes later dashed by new external pieces of evidence, until finally a viable chronology was established. The search for E.M. Bowman specimens in the world's herbaria was assisted by Australia's Virtual Herbarium (AVH 2018) and several online herbarium catalogues. E-mail correspondence with the curators of several herbaria was also undertaken.

The present author has recently published a biographical paper on Edward Bowman (Bean 2018).

## Herbaria holding Bowman specimens

MEL – this is the primary location, with 2510 separately catalogued specimens, but these comprising about 2000 gatherings

K – unknown number, probably more than 100. For many of the Bowman citations in *Flora Australiensis*, there is no specimen known from MEL; for Volume 3 alone, there are at least 12 citations of his specimens that do not have a corresponding MEL specimen.

BRI – 37 specimens

NSW – 26 specimens

P – 7 specimens; 4 *Acacia* (sent to P by Thozet, 2 are not at MEL), 1 *Pluchea*, 1 *Solanum*, 1 *Cyathea*.

CANB – 4 specimens

L – 3 specimens (*Cassia brewsteri* from Clermont; *Tragus australianus* from Neerkol Ck; *Ancistrachne uncinulata* from Herberts Ck)

US – 3 specimens known; 2 grass types (*Digitaria orbata* and *Panicum inaequale*) and *Acacia excelsa*.

DNA – 2 specimens

PERTH – 2 specimens

G – 1 specimen (type of *Neoroepera buxifolia*)

W – 1 specimen (type of *Setaria inaequalis*).

MO – 1 specimen (*Tapinosperma pseudojambosa*).

## General comments on E.M. Bowman specimens

### a) Size and quality

Bowman's collections are always fertile and without mould. His collections from New South Wales and the early ones from Queensland (1859 to 1865), typically comprise small branchlets or seed heads, without roots, rarely more than 15 cm long, but often with several pieces attached to a sheet. From 1865 to 1870 (when his collections were made as day trips or on relatively short excursions), his specimens are more substantial, and the grasses and sedges often include the whole plant including roots and rhizomes. His specimens from 1871–72 revert to being often quite small, rarely more than 15 cm (Fig 3e).

### b) Numbering

It is evident from examining the specimen records from Bowman's Burdekin River trip and Flinders River trip, that he assigned his numbers chronologically. This is because the numbers increase according to the sequence of localities along his route. However, it is equally evident that he did not assign the numbers as he collected each specimen, as there are numerous specimens that appear to be out of sequence. He probably assigned numbers when time allowed, for instance when he was encamped for a few days, or even (in a few instances) after the journey was over. It seems that when he was collecting around Rockhampton, he often did not number his collections at all.

Chronological numbering was not universally adopted by plant collectors of the time. For example, James Drummond of Western Australia would make a large collection set of hundreds of specimens, then arrange them by family and genus, and then assign numbers accordingly (Bean 1997). But in the case of both Bowman and Drummond, a new trip meant a new set of numbers, which, over the years, resulted in any given number being re-used several times. Bowman's collecting activities have here been divided into nine time periods, and within some of these time periods, two (or three) 'collection sets' are assumed, because Bowman has duplicated his specimen numbers. This suggests that two (or three) separate numbered sets of plant specimens were assembled. Applying this

logic, 13 collection sets (one from N.S.W. and 12 from Queensland) are enumerated here.

### c) Labelling

Bowman's field labels varied over time, and it is sometimes possible to determine the year of collection from the type of label he used. I believe that Bowman placed a label with every gathering he sent to Mueller, except for the period 1868 to 1870. In many cases, Bowman's original label has been lost, either because it fell out in transit or after arrival in Melbourne, or was not retained by Mueller. The small size of Bowman's labels meant that they were much more likely to go astray than those used by (for example) Dallachy or O'Shanesy. The tiny labels he used in 1862 did not include a locality, but he must have told Mueller where the collections were made in the accompanying letters. In subsequent years, his labels usually included a traceable locality, often the name of a creek or river.

Bowman sometimes wrote notes about the specimens he collected, especially flower colour. Other notes were often about its horticultural potential or the use or potential use for that species. For example, a specimen of the Burdekin plum (*Pleiogynium timorensis*) included the note "This is a large and handsome tree. The fruit is eatable and by no means bad"; for *Schefflera actinophylla* he commented: "One of the handsomest trees in the district well worthy of a place in every garden". Bowman never invented names for species he thought were new, but he did sometimes point out to Mueller differences that he observed; for *Solanum erianthum*, he wrote "This *Solanum* has white flowers and in that seems to differ from *S. verbascifolium* [now *S. mauritianum*] which I have always seen with blue fls [flowers] the leaves have the same scent E.M.B."

Often a gathering would include several duplicates. The label for these duplicates was provided by Mueller, but only very rarely was Bowman's original label data transferred to the label for the duplicates. Bowman has been criticised for his many specimens where the label locality is merely "Queensland" or "Capricornia". Such criticism is unwarranted, as Bowman never wrote a label with either of these terms. These generalised localities were used solely by Mueller on his herbarium labels, and he sometimes used one of these terms even when Bowman's original label was present.

It is extremely rare that Bowman included the exact date of collection on his labels; only three such labels have been located. Sometimes he wrote the month and year, and sometimes the year only, but the great majority of his labels are undated.

### d) Handwriting

Bowman's handwriting is quite distinctive, with the cursive script steeply forward sloping, and with complete but narrow loops for his y, g, f, and a long horizontal crossing of the t's. The letters are evenly spaced, and the lines of script are parallel (Fig. 1). As a result, his writing is readily legible and easily deciphered, in contrast to that of many of his correspondents. His initial loop of the upper case M and N is much higher than the subsequent loops, so that for plant labels where he wrote, for example, "No 47" (Fig. 2a), this is easily misinterpreted as "2047". His formation of the number "8" is very distinctive, with the final stroke downwards on the right, often closing the loop (Fig. 2b); the number "3" is similarly distinctive, as it often lacks the middle stroke (Fig. 2b).

## Chronology of Bowman's collections

### A. The New South Wales collections

In 1859, Bowman began collecting plant specimens, sending them to Ferdinand Mueller in Melbourne, who even then was very well known. His 1859 specimens were labelled as being either from "Dubbo" or the "Lower Macquarie". Based on the known natural distribution of the plant species that Bowman collected from the "Lower Macquarie" (AVH 2018), they were very likely collected close to the town of Dubbo. The "Lower Macquarie" and Dubbo specimens constitute Bowman's oldest extant herbarium specimens, and include the type specimen of *Ricinocarpos bowmanii*, which he probably collected in August or September 1859.<sup>1</sup> Bowman was still at Dubbo on the 4<sup>th</sup> December 1859, because an envelope attached to a herbarium sheet of *Crotalaria mitchellii* bears that date.<sup>2</sup>

After leaving Dubbo, he travelled to the central-

1 F. Mueller, *Fragmenta Phytographiae Australiae*, Vol. 1, fascicle 8 (Melbourne, November 1859), p. 181 [Bowman's collection must have been at least two months before the publication date]

2 Specimen at MEL (MEL 241104).

[P63]      SHIPPING

*Eucal. p...*

This species of *Eucalyptus* is of the common class called "Box" class, it does not shed its bark. The tree does not attain a very large size say 30 feet high and from 15 to 20 inches in diameter, the wood is durable and useful for many purposes, it has been used in some instances for sleepers on the Railway. Have met with it growing as far South as the Lower Murrumbidgee, the Aborigines there call it "Bimbel".  
*J.M.B.*  
 The large leaves are taken from a young tree.

Figure 1. Sample of the handwriting of E.M. Bowman (from MEL 1614278).  
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Figure 2. Examples of E.M. Bowman specimen labels; a. label from the 1864 trip to Flinders River (MEL 607647); b. label from the 1863 trip to Burdekin River (MEL 2146925); c. slitted label of the type used by Bowman in 1862 (MEL 611468); d. label from the 1864 trip to Flinders River (MEL 95498); e. slitted label, and plant specimen from 1871 (MEL 11548).

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north of the state, including Walgett.<sup>3</sup> During this time, most of his herbarium specimens bear the very unhelpful locality of "Upper Darling tributaries". However, on some of his later Queensland specimen labels, Bowman mentioned somewhat more precise locations for his former collections in N.S.W., including the Bogan, Castlereagh and Namoi Rivers.<sup>4</sup> Based on the natural distribution of the species he gathered, those from the Bogan River were probably collected between Nyngan and Brewarrina; and those labelled Namoi River were probably collected close to Walgett or even further west. A reference to the presence of *Eucalyptus populnea* on the "Lower Murrumbidgee"<sup>5</sup> seemingly refers back to his time in the Wagga Wagga-Narrandera area in 1854–1856.

There are two citations of specimens saying "Balonne River, Bowman", one for *Calandrinia pumila*<sup>6</sup> and the other for *Zygophyllum fruticosum*.<sup>7</sup> As there are no known specimens associated with these citations,<sup>8</sup> and as this location is usually associated with Thomas Mitchell, I am confident Balonne River was not a place that Bowman visited.

## B. The Queensland collections

### Collection set 1: Walloon-Broadsound-Head of the Isaacs, 1862

For his first major collection set, in 1862, Bowman used the format 'number/year' for his labels, for example 66/62. All specimens are apparently part of a single set as there is no duplication of numbers. The labels are small squares of pale blue paper, uniquely numbered, often only 2 cm x 2 cm, with two parallel slits, so that the label could be inserted onto a small branchlet (Fig. 3c). Numerous specimens also have another slitted label with a (different) collecting number that lacks the

slash and the '62'. The presence of this second label is confusing, but it is thought that it was associated with a certain locality or sub-collection set, as these numbers often repeat, for example there are three specimens of three species from 1862 where the 2<sup>nd</sup> label bears the number '16'.

Bowman did not write a locality on any of his 1862 labels, but for a few dozen specimens, Mueller's label states the locality as "Walloon", on the Dawson River, near present-day Theodore, and a few say "Castle Creek", a place close to Walloon. These localities were presumably gleaned from Bowman's covering letter. It seems that most of his 1862 specimens were from Walloon, because some of the low-numbered and high-numbered labels are of species that do not extend to the tropics, and it is presumed that his stay there was lengthy and in the middle of the year.<sup>9</sup>

The other places that Bowman definitely visited during 1862, towards the end of the year, were 'Sources of the Isaacs',<sup>10</sup> that is the Nebo (then called Fort Cooper) district,<sup>11</sup> and 'Broadsound', including Princhester<sup>12</sup> and Amity Creek.<sup>13</sup>

Mueller cited two Bowman specimens from the 'Bowen River' in *Fragmenta* 3: 53 (published in July 1862), implying a visit there in early 1862, but there is considerable doubt as to the authenticity of this. It is difficult to see how (and why) he would travel to Bowen River, far to the NW of Rockhampton to collect two specimens, then immediately go to Walloon, to the SW of Rockhampton. For one of the specimens concerned (MEL240321), the clearly written location is 'Brown River', so this specimen was probably from a quite different (and untraced) location.

Estimated number of gatherings: 206.

3 New South Wales Government Gazette (Sydney), 5 July 1861, p. 1435. [Undelivered letter returned to Sydney post office, addressed to Bowman at Walgett]; New South Wales Government Gazette (Sydney), 8 October 1861, p. 2119. [Undelivered letter returned to Sydney post office, addressed to Bowman at Walgett].  
4 Localities mentioned on the labels of *Acacia horophyllum* (MEL2077203) and *Solonum stelligerum* (MEL11521).  
5 Locality mentioned on the label of *Eucalyptus populnea* (MEL1614278).  
6 F. Mueller, *Fragmenta Phytographiae Australiæ*, Vol. 10 (Melbourne, 1876), p. 68.  
7 F. Mueller, *Fragmenta Phytographiae Australiæ*, Vol. 11 (Melbourne, 1878), p. 29.  
8 A. McArdle, National Herbarium of Victoria, pers. comm., February 2018.

9 F. Mueller, *Fragmenta Phytographiae Australiæ*, Vol. 3 (Melbourne, September 1862), p. 89. [This is the first citation of a Walloon specimen, hence Bowman must have been there some months prior to this].

10 Two specimens with this locality (MEL 2269246 & MEL 287784) bear the label type used by Bowman in 1862.

11 Two letters from Mueller to W. Hooker (L63.05.14 and L63.09.25, Mueller Correspondence Project) show that Bowman made separate gatherings of *Poroceteroch muelleri* from Fort Cooper, a few months apart, one in late 1862 and one in early 1863.

12 Two separate gatherings of *Neoroeporo buxifolio* (published 1866) were made by Bowman, a flowering one in late 1862, and a fruiting one in early 1863. Both were sent to Geneva and became type material.

13 F. Mueller, *Fragmenta Phytographiae Australiæ*, Vol. 3 (Melbourne, March 1863), p. 147. [This is the first citation of a Broadsound specimen, hence Bowman must have been there some months prior to this].

**Collection set 2: Burdekin River trip, 1863**

Starting around January 1863, Bowman travelled from Rockhampton to the Burdekin River, and then east to Bowen (Port Denison). The route shown in Fig. 3 is based both on the documented track usually taken by drovers in the 1860s,<sup>14</sup> and from the localities mentioned by Bowman on his specimen labels. There is a very strong correlation between the two. His numbers show a clear chronological pattern; 7–135 are from Broadsound (some labelled Marlborough or Princhester), 161–188 are from the Connors River area, 194–196 are from

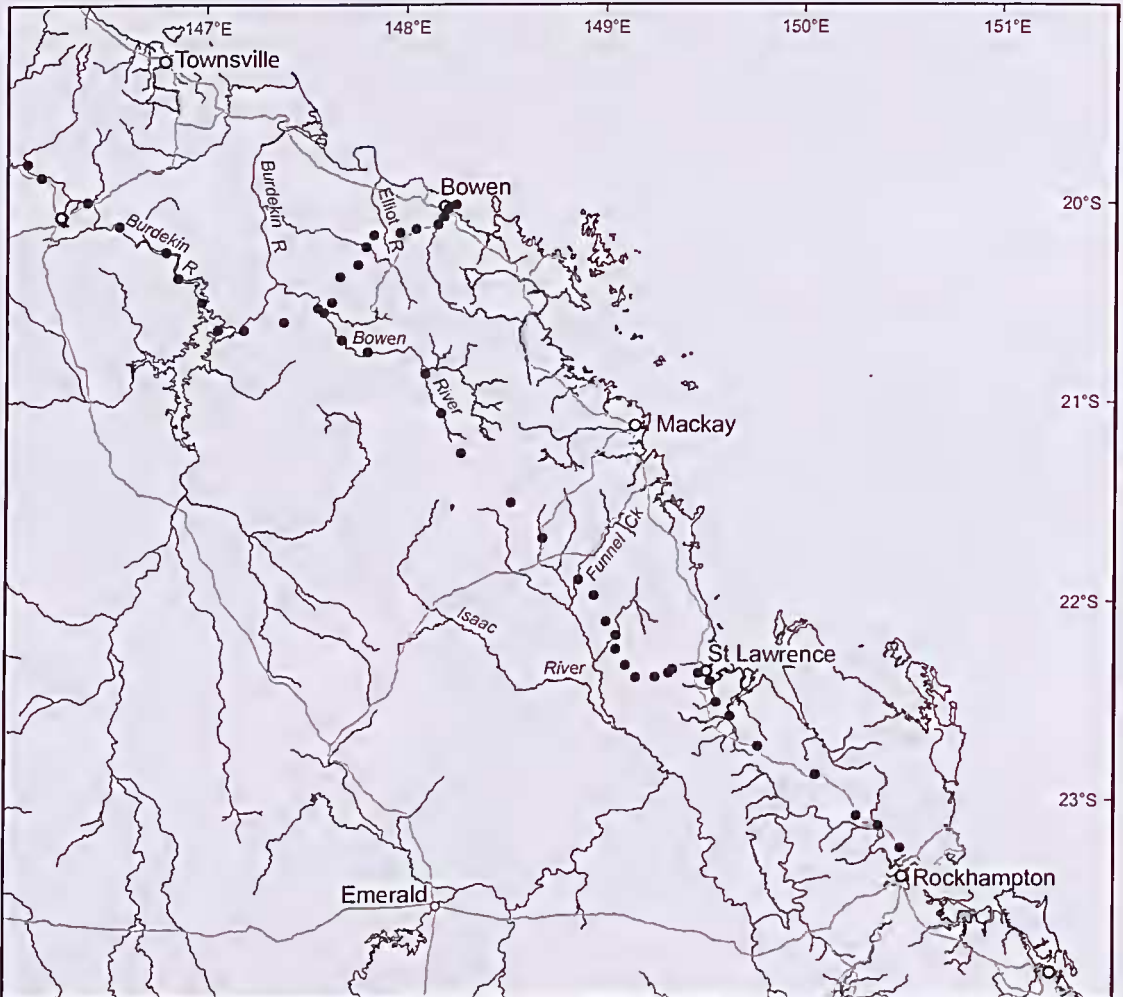
Funnel Creek, 212–234 are from Nebo Creek or Cooper Creek, 237–313 are from Bowen River, and 324–352 are from Burdekin River and Elliot River. His labels for this trip are typically white, rectangular, not slitted, and include a number and a locality. They are derived from the margins of newspaper pages. No specimen from this collection is dated.

Estimated number of gatherings: 346.

**Collection set 3: Cape River-Flinders River trip, 1864**

This collection set was associated with Bowman's most successful trip, in terms of new species discovered. The primary purpose of the trip was to drive a mob of sheep to the upper reaches of the Flinders River.

14 T. P. Pugh, 'Country Directory', (Brisbane, 1863), pp. 197–199. <http://www.textqueensland.com.au/item/journal/d4bfc86e8290056dd4b6b035e554f97>, viewed 8 May 2018.



**Figure 3.** Route taken by Bowman during his 1863 expedition to Burdekin River. The dots represent landmarks along the route and do not indicate the passage of a particular period of time.

Because a newspaper report on the trip was made,<sup>15</sup> it is possible to trace the route taken almost exactly (Fig. 4), and give approximate dates for various parts of the journey. The party started from Port Denison (now Bowen), and headed west through the valley between Mt Abbot and Mt Aberdeen, then crossed the Bogie River and the Bowen River, the Leichhardt Range, reaching Mt McConnell and the Suttor River before 25<sup>th</sup> February 1864.<sup>16</sup> This is where Bowman started his plant collecting, as the low numbered specimens are all from Suttor River and nearby localities. They then followed the Cape River all the way to its source, at which point they struck westward to the headwaters of the Flinders River. They reached it on or before 2<sup>nd</sup> May 1864<sup>17</sup>, and were still 'on the Flinders' on 15<sup>th</sup> May. The party deliberately bypassed the White Mountains, a large area of quartzose sandstone, which even then had a reputation as a no-go area for livestock, as there is no palatable grass, and many sheep had died in the previous year after eating a poisonous plant that grows there. Bowman was instrumental in determining that the culprit was *Gastrolobium grandiflorum*, thereafter known as Poison Pea.<sup>18</sup>

The party's return journey followed the same route, but was much quicker because they were no longer driving sheep. Nevertheless, Bowman probably gathered a few extra specimens that he had not seen (or were not fertile) on the outward journey. They reached Mt McConnell on 4<sup>th</sup> June 1864 and were back at Port Denison later in that same month.

Bowman's annotation on a specimen of *Chamaecrista symonii* (MEL 232583) says "Appears to be rare. I sent specimens of it from the Bowen [River] last year marked No. 268.". This statement provides very strong evidence that Bowman kept a notebook recording his collection numbers and the plant species they represented.

There are 215 specimen records at MEL for this trip, while Bowman's numbers run up to at least 316. Therefore around 100 specimens collected and numbered must have been subsequently discarded or distributed by Bowman or by Mueller. The labels are typically white, rectangular, not slitted, include a

number and a locality, and they are derived from the margins of newspaper pages. Labels are written in ink (Fig. 3d) or pencil, or pencil overwritten with ink.

There is an endemic *Livistona* (*L. lanuginosa*) that grows on the floodplain of the Cape River and some nearby streams, but there is no Bowman specimen of it at MEL. We learn from the newspaper article that Bowman indeed saw this *Livistona*, but only juvenile plants and dead mature stems were available at that time. Similarly, an '*Inga*' was seen and much admired by Bowman on the Flinders River (from the description, undoubtedly *Vachellia sutherlandii*), but no collection was made because the trees were sterile.

Estimated number of gatherings: 229.

#### Collection set 4: Cleveland Bay, Rockhampton, Berserker Range, 1865

Bowman visited Cleveland Bay very early in 1865,<sup>19</sup> almost certainly by boat, and collected around 20 plant specimens. This visit was only a few months after the first party of settlers had arrived at what was to become Townsville.<sup>20</sup> Immediately after this trip, he visited a part of the Fitzroy River known as the "Upper Flats". This locality is downstream from Rockhampton, in the area now known as Nerimbera. Bowman explored rainforest 'scrubs' at Upper Flats, and it was there that he discovered the beautiful palm *Archontophoenix alexandrae*, named by Mueller in July 1865. In the latter part of 1865, Bowman began a botanical exploration of the Berserker Range (which he referred to as the Bersaker Range), just to the east of Rockhampton. Many other collections, labelled Rockhampton or Fitzroy River are untraceable, as they lack numbers and dates. While some of the Fitzroy River and Rockhampton collections were made in 1865, I suspect that the majority were made during 1868, and a small number even later, including 1871.

His labels of this period are similar to those for the Burdekin River and Cape River trips, however most are without a number.

Estimated number of gatherings: 66.

15 Notes of Journey from Port Denison to the Flinders. *Queensland Times, Ipswich Herald and General Advertiser* (Qld), 22 November 1864, p. 4.

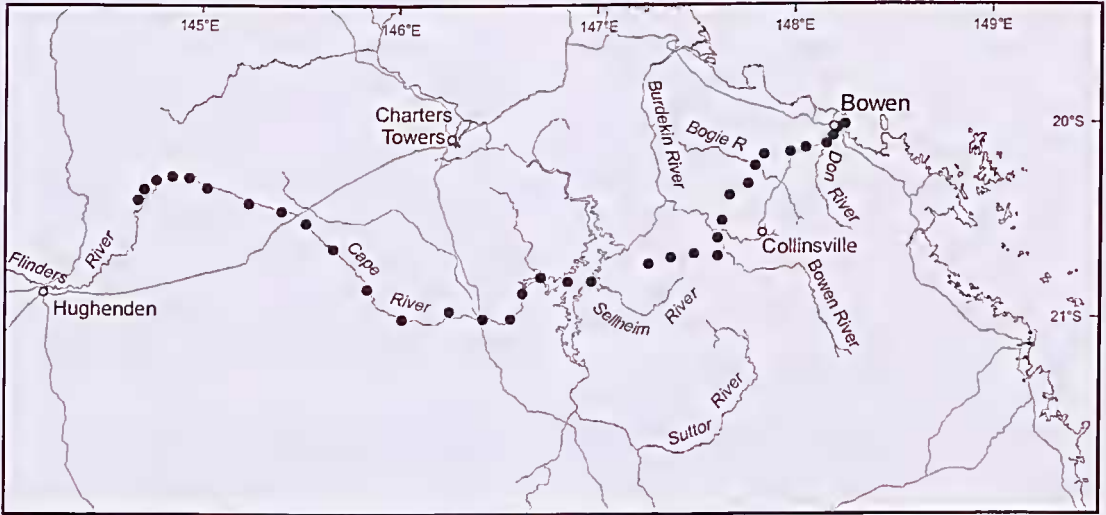
16 Dated specimen of *Aeschynomene indica* from the Suttor River, 25 February 1864 (MEL276203).

17 Label of MEL240719 (*Crotolaria novae-hollandiae*) specifies this date.

18 *The Sydney Morning Herald* (N.S.W.), 2 December 1872, p. 10.

19 F. Mueller, *Fragmento Phytographiae Australioe*, Vol. 5 (Melbourne, June 1865), p. 42. [This is the first citation of a Cleveland Bay specimen, hence Bowman must have been there some months prior to this].

20 Townsville history 1770–1900 <https://www.townsville.qld.gov.au/about-townsville/history-and-heritage/townsville-history/townsville-1770-to-1900>, viewed 2 April 2018.



**Figure 4.** Route taken by Bowman during his 1864 expedition to Flinders River. The dots represent landmarks along the route and do not indicate the passage of a particular period of time.

**Collection sets 5, 6 and 7: Neerkol Creek-Crocodile Creek-Table Mountain, 1866–1867**

In early 1866, Bowman moved to the south-west of Rockhampton, probably living in the vicinity of Stanwell, as there are many specimen collections from nearby Neerkol Creek. His first dated collection from Neerkol Creek was May 1866. The first collection from Table Mountain was in June 1866, then again in February 1867. The Table Mountain of today is a small hill about 6 km SE of Stanwell, covering around 100 hectares, and reaching an elevation of 340 metres. This is apparently not the Table Mountain of the 1860s: newspaper articles of that era say that Table Mountain is at the head of Crocodile Creek (=Gavial Ck), i.e. south of Bouldercombe, where there is a flat-topped range covering about 1000 hectares and reaching 450 metres altitude; the Dee River has its source in this range, NE of Mount Morgan. Some of Bowman’s collections are from the “Head of the Dee”, and these have the same date as some of the Table Mountain collections.

Other localities visited in 1866 and 1867 are all close to Neerkol Creek, namely Gracemere, Stuart Creek, Midge Creek (March 1867), and Stanwell (Fig. 5). The last dated specimen from Neerkol Creek is from August 1867. His labels of this period are white and rectangular, but typically larger than those of the Burdekin River and Cape River trips.

Estimated number of gatherings: 412.

**Collection set 8: Rockhampton, 1868**

Almost nothing is known about Bowman’s movements or collections in 1868. Certainly there are no dated collections from that year, but a newspaper article published in August 1868<sup>21</sup> confirms that he then resided in Rockhampton. A specimen of *Galinsoga parviflora* with a label typical of those used by P. O’Shanesy and in his handwriting<sup>22</sup> includes the script “moist places, Rockh. E. Bowman 20/4/68”; this wording suggests that either Bowman was a co-collector, or that he gave the specimen to O’Shanesy. There is an undated, unnumbered Bowman specimen of the same species from “Rockhampton”; presumably it was part of the same gathering. It would appear that Bowman dispensed with field labels upon moving back to Rockhampton, as they are rarely encountered.

Estimated number of gatherings: 175.

**Collection sets 8, 9 & 10: Herberts Creek-Gainsford-Kings Creek, 1869–1870**

Bowman evidently moved to Gainsford (on the Dawson River, SW of Rockhampton) sometime in 1869. There are numerous specimens from 1869 that say either Gainsford or King’s Creek, or both. In June 1870, Bowman gives his address as “Herbert’s Creek”,<sup>23</sup> a location just

21 *The Australasian* (Melbourne, Vic.), 22 August 1868, p. 25.

22 Specimen at MEL (MEL643605).

23 *The Queenslander* (Brisbane, Qld), 25 June 1870, p. 6.



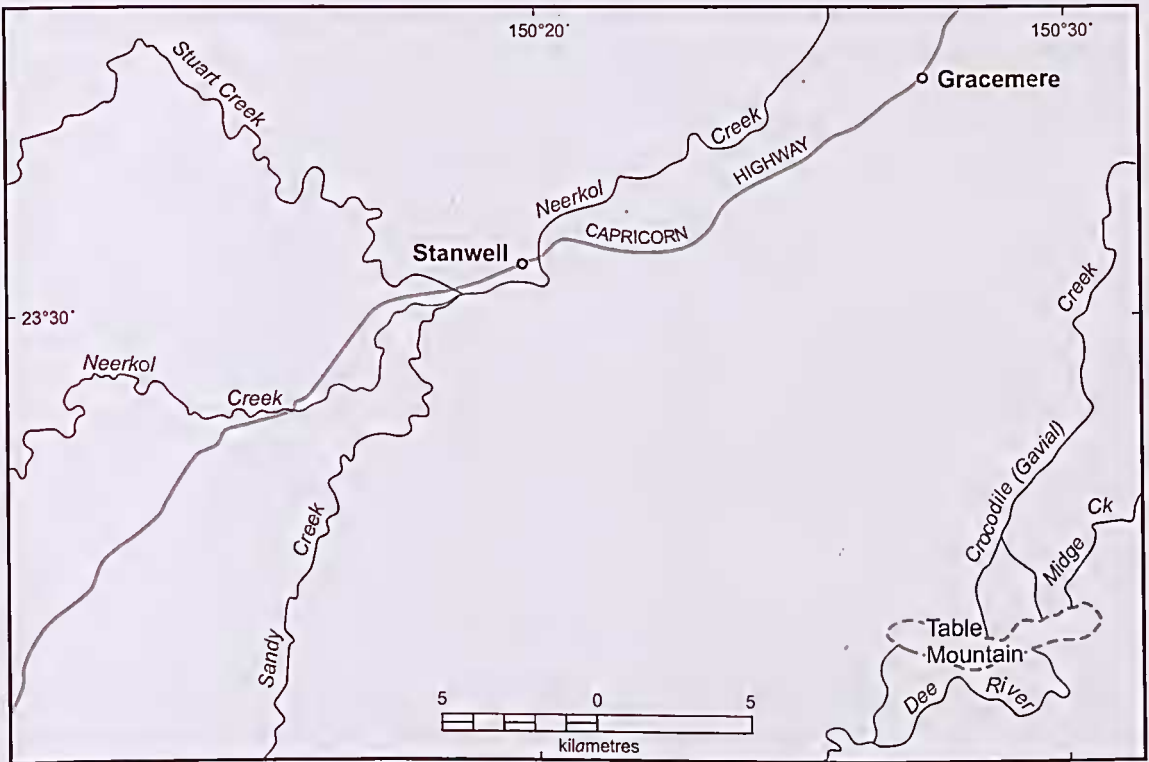


Figure 5. Localities visited by Bowman in 1866–67.

a few kilometres further to the east (Fig. 6). The great majority of 1870 specimens are from Herbert's Creek, but the Gainsford/King's Creek locations also appear for that year, and there are just a few from Westwood and Rockhampton. As with his 1868 Rockhampton collection set, it seems that Bowman only rarely wrote a field label for these specimens, and numbered specimens are very rare indeed. The grasses feature strongly in these collection sets, but a wide range of flowering plants are represented, as well as some fungi and lichens.

Estimated number of gatherings: 408.

#### Collection sets 11 & 12: Peak Downs-Copperfield-Broadsound, 1871–1872

In 1871, Bowman travelled from Gainsford to Clermont (via Gordon Downs and Lilyvale), with a side-trip to Nogo River (near where Emerald is now located). After collecting numerous specimens from 'Peak Downs' (the area surrounding Clermont) he travelled ENE of Clermont to the Isaac River, then onto St Lawrence, and

southwards to Rockhampton, through "Broadsound" (Fig. 7). A newspaper article from 1873 details the route that he almost certainly took.<sup>24</sup> He must have then gone to the newly settled Keppel Sands area, as there are two specimens from the mouth of the Fitzroy, and one from Keppel Bay. He then returned to Gainsford, where he was residing in December 1871.<sup>25</sup> After that, he returned to Clermont, where he died in June 1872. His last known specimen was one of *Enchylaena tomentosa*, collected from Peak Downs in March 1872. He frequently used slitted labels in these collection sets, as he had done in 1862 (Fig. 2e).

Estimated number of gatherings: 111.

### An analysis of the collections made by Edward Bowman

The estimated total number of gatherings made by Bowman is 2033. This figure comprises the total of the

<sup>24</sup> *Rackhampton Bulletin* (Qld), 4 June 1873, p. 2.

<sup>25</sup> *Maryborough Chronicle, Wide Bay and Burnett Advertiser* (Qld), 2 January 1872, p. 4.

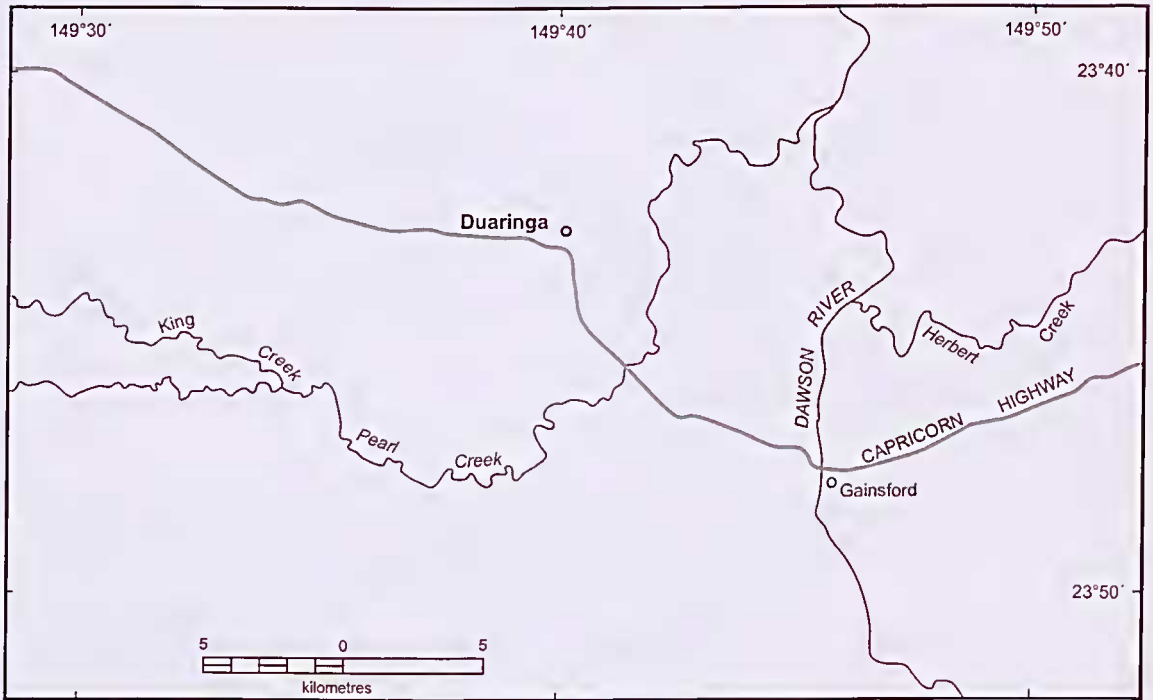


Figure 6. Localities visited by Bowman in 1869-71.

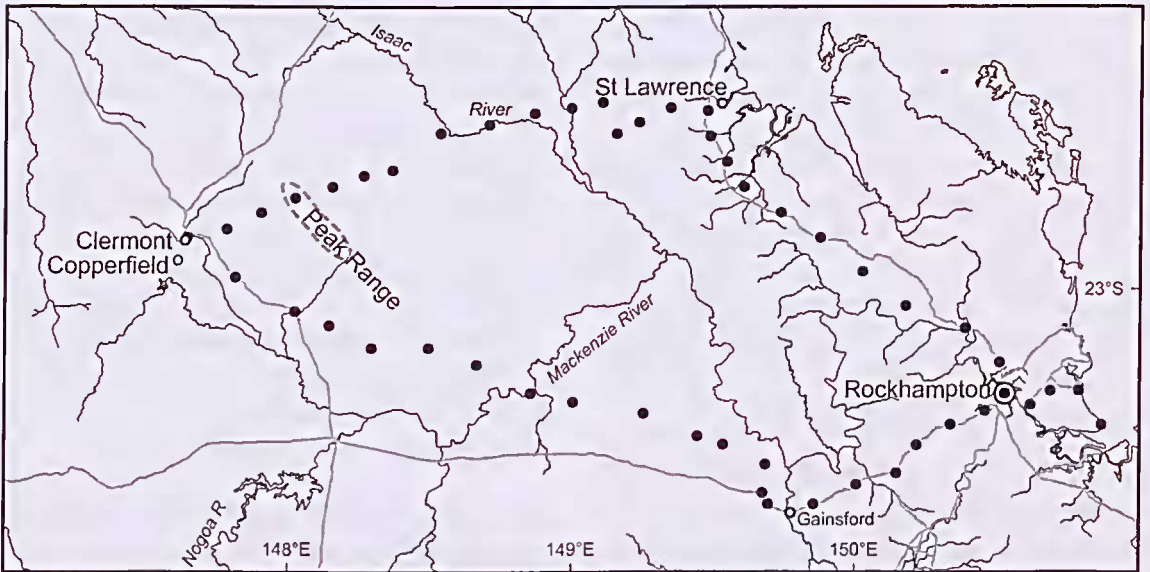


Figure 7. Route taken by Bowman during his 1871 expedition to Clermont and Broadsound. The dots represent landmarks along the route and do not indicate the passage of a particular period of time.

collections documented above, plus 31 Queensland gatherings which cannot be placed due to lack of information, plus 29 New South Wales gatherings, plus 21 specimens (18 fungus specimens at K; 1 *Pterocaulon* at K; 2 specimens at P) that are present at K or P, but absent from MEL. In arriving at this number, the assumption has been made that unnumbered records of species with the same location or date as numbered collections, are part of the same gathering.

The great majority of Bowman's collections are of flowering plants. His favourite plant group was undoubtedly the Fabaceae subf. Faboideae (Papilionoideae). This subfamily accounts for 13% of his total gatherings, and tops the list for every one of the collection sets listed above. A rather distant second is the Poaceae (grasses), followed by Asteraceae and Myrtaceae. There are 65 *Acacia* collections, and just 30 eucalypt (*Eucalyptus* + *Corymbia*) collections. There are relatively few rainforest taxa among his collections, and relatively few swamp plants and water plants, so it seems that his preference was for eucalypt woodlands. Most of his collections were made from alluvial ecosystems, as this is where his work required him to be, and relatively few collections were made from mountaintops. A couple of his 1871 collections give the locality as "top of Peak Range", but I believe that by this he meant the top of the watershed where the road crossed it. None of the species he collected suggest that he scaled any of the mountains in the Peak Range.

He made 44 gatherings of Pteridophytes, with nearly half of them from the Table Mountain and Crocodile Creek area. His first collection of a fungus specimen was in 1864, and the second in 1867. In 1868, he collected another six fungi. During his time at Gainsford and Herbert's Creek (1869–70), he made a very significant collection of fungi – some 35 species. Mueller probably asked Bowman to make a special effort with the fungi, in the knowledge that M.J. Berkeley was preparing a paper on Australian fungi (Berkeley 1873). Many of Bowman's fungi specimens are cited there. Bowman did collect a modest number of lower plants (two mosses, eight liverworts, three lichens and an alga).

Bowman made many first-collections for species in eastern Australia. His collections of *Solanum orgadophilum* from Capella in 1871, and *Eucalyptus similis* from Cape River in 1864 are just two examples.

He was one of the few collectors of his era to include comments on the species he collected in terms of their value for timber, medicine or ornament. Around 200 of his specimens were used as type material by various botanists, especially Mueller.

## Eponymy

The following 11 taxa were named after E.M. Bowman (in chronological order).

*Ricinocarpos bowmanii* F.Muell. (as 'bowmani'), *Fragm.* 1: 181 (1859).

*Eremophila bowmanii* F.Muell. (as 'bowmani'), *Fragm.* 2: 139 (1861).

*Boronia bowmanii* F.Muell. (as 'bowmani'), *Fragm.* 4: 135 (1864).

*Eucalyptus bowmanii* Benth. (as 'bowmani'), *Fl. Austral.* 3: 219 (1867).

*Agaricus bowmanni* Berk., *J. Linn. Soc., Bot.* 13: 158 (1873).

*Daedalea bowmanii* Berk. (as 'bowmani'), *J. Linn. Soc., Bot.* 13: 166 (1873).

*Pimelea bowmanni*<sup>26</sup> Benth., *Fl. Austral.* 6: 30 (1873).

*Dendrobium bowmanii* Benth., *Fl. Austral.* 6: 286 (1873).

*Cyperus bowmanni* F.Muell. ex Benth., *Fl. Austral.* 7: 287 (1878).

*Xylaria hypoxylon* var. *bowmanii* F.Muell. ex Berk. (as 'Bowmani'), *J. Linn. Soc., Bot.* 18: 389 (1881).

*Cynanchum bowmanii* S.T.Blake, *Proc. Roy. Soc. Qld* 59: 168 (1948).

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<sup>26</sup> This spelling is considered an intentional Latinisation of Bowman's name that does not concern only the termination, nor omission of the terminal vowel or consonant, nor conversion of the terminal vowel to a different vowel (Art. 60.9, Shenzhen Code), and as such is not correctable (J. McNeill, pers. comm., May 2018).

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## Appendix 1. Annotated list of E.M. Bowman's Queensland collecting localities

LOCALITY (with approx. number of gatherings)	WHEN VISITED	LAT-LONG	PRECISION	NOTES
Amity Creek (5)	late 1862, early 1863	22° 30' 149° 33'	2 km	Between Ogmoo and St Lawrence
Bersaker Range (25)	late 1865	23° 21' 150° 34'	5 km	just east of Rockhampton
Blackwater Creek (2)	early 1871	23° 24' 148° 55'	2 km	About 20 km N of town of Blackwater
Bowen port/town (3)	mid 1863, early 1864	20° 00' 148° 15'	2 km	also referred to as Port Denison
Bowen River (73)	early to mid 1863	20° 45' 147° 50'	50 km	Bowman followed this river for about 130 km. This lat/long represents the probable midpoint of collection sites
Brawl Creek (5)	Feb 1864	20° 38' 147° 31'	2 km	WSW of Collinsville
Broadsound (104)	late 1862, early 1863, mid 1871	22° 42' 149° 42'	50 km	In the sense used by Bowman, a strip of country about 115 km long, from Canoona to St Lawrence, and including the following locations that are sometimes used without reference to "Broadsound": Princhester, Marlborough, Granite Creek, Amity Creek, Montrose Creek. This lat/long represents the probable midpoint of collection sites
Burdekin River (46)	mid 1863	20° 16' 146° 51'	75 km	Bowman followed this river for about 170 km. This lat/long represents the probable midpoint of collection sites
Cape River (head of the) (11)	Apr 1864	20° 20' 145° 03'	15 km	Estimated as the uppermost 27 km of the river. This lat/long represents the probable midpoint of collection sites
Cape River (78)	Mar-Apr 1864	20° 45' 145° 46'	75 km	Specimens with this locality made over a distance of about 180 km. This lat/long represents the probable midpoint of collection sites
Castle Creek (6)	early to mid 1862	24° 50' 150° 17'	2 km	Tributary of Dawson River, close to present day Theodore

LOCALITY (with approx. number of gatherings)	WHEN VISITED	LAT-LONG	PRECISION	NOTES
Castle Mount (3)	early 1865	19° 15' 146° 48'	1 km	Castle Hill, Townsville
Chin Chin Creek (2)	mid 1863			Not traced. Label type suggests Burdekin R trip (1863), and the numbers (319&322) fit into the sequence, placing it near the Burdekin River
Clermont (1)	1871	22° 49' 147° 38'	2 km	
Cleveland Bay (17)	early 1865	19° 14' 146° 48'	2 km	
Connors Range (3)	early 1863	22° 22' 149° 20'	2 km	west of St Lawrence
Connors River (and Connors Ck) (14)	early 1863	22° 12' 149° 03'	5 km	
Cooper Creek (12)	early 1863	21° 33' 148° 34'	5 km	NW of Nebo
Copella (1)	early 1871	23° 05' 148° 01'	2 km	Now Capella
Copperfield (9)	1871	22° 51' 147° 36'	2 km	A few km south of Clermont
Crocodile Creek (47)	1867	23° 35' 150° 28'	2 km	5 of Bouldercombe; now called Gavial Creek
Dawson River (7)	1869	23° 47' 149° 45'	5 km	About 13 km SE of Duaringa
Elliot River (17)	mid 1863	20° 07' 147° 53'	2 km	WSW of Bowen
Fitzroy River (41)	1865, 1868	23° 23' 150° 31'	10 km	This lat/long represents the probable midpoint of collection sites
Fitzroy River estuary (2)	1871	23° 30' 150° 51'	2 km	
Fletcher Creek (1)	mid 1863	19° 49' 146° 04'	2 km	A tributary of the Burdekin River
Flinders River (and head of the Flinders) (26)	May 1864	20° 23' 144° 42'	10 km	This lat/long represents the probable midpoint of collection sites
Fort Cooper (4)	early 1863	21° 41' 148° 41'	2 km	Now called Nebo
Frenchmans Ck (5)	late 1865	23° 20' 150° 33'	2 km	just east of Rockhampton
Funnel Creek (6)	early 1863	21° 55' 148° 51'	2 km	
Gainsford (58)	1869, 1871	23° 47' 149° 45'	2 km	About 13 km SE of Duaringa
Glenella Creek (1)	Jan 1864	20° 41' 147° 31'	2 km	WSW of Collinsville
Gogango scrub (2)	1869 or 1870	23° 40' 150° 01'	5 km	Remnants of this scrub still exist near the Capricorn Hwy
Gordon Downs (2)	early 1871	23° 16' 148° 18'	2 km	SE of Capella

LOCALITY (with approx. number of gatherings)	WHEN VISITED	LAT-LONG	PRECISION	NOTES
Gracemere (12)	Jan 1867	23° 26' 150° 27'	2 km	
Granite Creek (1)	early 1863	22° 36' 149° 36'	2 km	Near Ogmore
Head of the Dee [River] (8)	Jan-Feb 1867	23° 37' 150° 27'	5 km	NE of Mount Morgan
Head of the Isaacs (12)	late 1862, early 1863	21° 50' 148° 44'	5 km	Including Denison Creek and Nebo Creek
Herberts Creek (255)	1869, 1870	23° 44' 149° 49'	2 km	About 17 km E of Duaringa
Isaac River (4)	mid 1871	22° 25' 148° 53'	5 km	Near present-day "Batheaston" station
Isabella Creek (3)	Feb 1864	20° 47' 147° 19'	2 km	
Keppels Bay (1)	1871	23° 22' 150° 47'	2 km	
Kings Creek (68)	1869, 1870	23° 46' 149° 35'	2 km	About 12 km SW of Duaringa
Leichhardt Range (3)	early 1864	20° 44' 147° 23'	5 km	
Lillyvale (1)	early 1871	23° 12' 148° 20'	2 km	A rest stop for coaches on the road from Gainsford to Clermont, with a waterhole (Crinum Ck)
Limestone Ck (head of) (1)	mid 1863			Not traced, but stated by Bowman to be "a tributary of the Burdekin"
Lotus Creek (1)	early 1863	22° 21' 149° 06'	2 km	West of St Lawrence
Marlborough (8)	late 1862, early 1863	22° 52' 149° 51'	2 km	
McKenzie River (5)	early 1871	23° 22' 148° 50'	2 km	Now Mackenzie River; the crossing was near the Bedford Weir
Midge Creek (4)	Mar 1867	23° 34' 150° 30'	2 km	Now called Midgee Ck; collections made in the upper reaches
Montrose Creek (3)	early 1863	22° 37' 149° 37'	2 km	near Ogmore
Moonlight Creek (2)	early 1864	20° 37' 147° 31'	2 km	W5W of Collinsville
Mount Archer (4)	late 1865	23° 20' 150° 34'	1 km	just east of Rockhampton
Mount Wyatt (2)	early 1864	20° 53' 147° 16'	2 km	SW of Collinsville
Mulholland Creek (1)	early 1863			Not traced but label type suggests Burdekin R trip (1863), and the number (190) fits into the sequence, and places it near Nebo or Funnel Creek
Nebo Creek (4)	early 1863	21° 43' 148° 41'	5 km	
Neerkol Creek (285)	May 1866 to Aug 1867	23° 29' 150° 21'	5 km	Probably most specimens from the vicinity of Stanwell

LOCALITY (with approx. number of gatherings)	WHEN VISITED	LAT-LONG	PRECISION	NOTES
Nogoa River (1)	early 1871	23° 25' 148° 25'	10 km	Collection site uncertain, probably NE of present-day Emerald
Peak Downs (18)	1871-72	22° 45' 147° 45'	10 km	Bowman used this term for the country surrounding Clermont
Peak Range (near) (5)	mid 1871	22° 39' 148° 10'	10 km	Cotherstone Rd, but from the species collected, this locality is broadly circumscribed. This lat/long represents the probable midpoint of collection sites
Peak Range (top of/ summit of) (4)	mid 1871	22° 40' 148° 01'	2 km	Cotherstone road, ENE of Clermont
Pearl Creek (1)	1869 or 1870	23° 47' 149° 38'	2 km	About 10 km SSW of Duaringa
Pelican Creek (1)	mid 1863	20° 33' 147° 37'	2 km	W of Collinsville
Percy Douglas Creek (2)	Feb 1864	20° 53' 147° 14'	2 km	About 60 km N of Mt Coolon
Port Denison (6)	mid 1863, early 1864	20° 00' 148° 15'	2 km	now Bowen
Princhester (and Princhester Ck) (11)	late 1862, early 1863	22° 55' 150° 01'	5 km	
Rockhampton (141)	1865, 1868, 1870, 1871	23° 23' 150° 30'	5 km	
Ross's River (1)	early 1865	19° 16' 146° 49'	2 km	Ross River, Townsville
Sandy Creek (3)	Jan 1867	23° 30' 150° 18'	2 km	A tributary of Neerkol Creek, just west of Stanwell
Saunders Creek (1)	1864			Not traced, but evidently on the 1864 expedition, perhaps flowing into the Flinders River
Sellheim River (7)	early 1864	20° 48' 146° 59'	5 km	Mt McConnell homestead is on the Sellheim River
St Lawrence Creek (or Lawrence Ck) (2)	early 1863	22° 20' 149° 32'	2 km	Collections made on tidal part of the creek
Stanwell (6)	1866 or 1867	23° 29' 150° 20'	2 km	
Stewarts Creek (5)	1866 or 1867	23° 28' 150° 17'	2 km	Now spelled Stuarts Creek, near Stanwell
Suttor River (70)	Feb-Mar 1864	20° 49' 146° 51'	5 km	
Table Mountain (29)	Jun 1866, Feb 1867, Apr 1867	23° 36' 150° 28'	2 km	S of Bouldercombe
Upper flats (5)	early 1865	23° 24' 150° 35'	2 km	Fitzroy River, Nerimbera, Rockhampton
Walloon (37)	early to mid 1862	24° 53' 150° 13'	5 km	Close to present-day Theodore
Westwood (11)	1870, 1871	23° 37' 150° 09'	2 km	